Lower costs or increased selection?

Effects of privatization of day surgery treatments in Norway

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17.09.2007

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Foreword

Acknowledgements

This paper is written with financial support from Norwegian Research Council trough Health Organization Research Norway (HORN), University of Oslo.

I would like to thank my supervisor Terje P. Hagen for valuable comments and guiding on this paper, and the Regional Health Enterprises which have been kind enough to provide data on their use of private commercial hospitals.

1. Introduction

1.1 Intro

The hospital-reform anno 2002 included, other than the change to governmental ownership, a wish to in a larger extent use marked mechanisms and private actors in the health system. The idea was to try stimulating cost effectiveness trough competition (St.meld.nr.5 2003-2004). The private actors could be suppliers of entire treatments as for example surgical interventions or input in treatment processes such as laboratory tests and diagnostic radiology (Hagen, Iversen et al. 2007).

The use of markets and private actors is based on economic theories that competitive markets are more efficient than monopolistic behaviour. By introducing more actors to the market we get competition, and this could again lead to more efficient use of resources (Varian 1993) but also selection problems (Ellis 1998).

In this paper I will look at

1. If, and to what extent, privatization and competition within the health care service has effected the costs.

2. If, and to what extent, privatization and competition has led to selection of patients.

The data material is primarily from a questionnaire sent out to the regional health enterprises, and data from the Norwegian patient register. This data is primarily from the years 2002 until 2006.

The analysis is based on data from day-surgical treatments performed by private commercial hospitals in the period 2002-2005. The prices the regional health enterprises are paying for the treatments (percentage of full DRG) are used as an

indicator for the regional health enterprises' costs, while the age mix of patients is used as an indicator for patient selection.

1.2 The Norwegian health care system

I will start out by presenting the main elements of the Norwegian health care system with the emphasis on recent reforms embracing private providers of health care services.

1.2.1 Structure

The health care system in Norway is financed primarily by taxes. This means that health services are "free" for the population due to the tax-funding. Some out of pocket payment is also represented, but most of these payments are related to consultations with specialists, general practitioners and ambulatory care (Johnsen 2006).

Today the Norwegian health care system is organized on a national level, a regional level and a local level (Johnsen 2006). The organizations treating patients are primarily owned and financed by the government, except for private commercial hospitals.

The municipalities have responsibility at the local level. The responsibilities consist of primary care, school health services, general medical treatment, nursing, nursing homes and home nursing (Johnsen 2006). The municipalities are funded by the government through block-financing.

The counties are only responsible for the dental care, as they due to the hospital reform in 2002 lost their responsibility for the specialist care to the central government.

The overall responsibility for health care services in Norway rests at the national level. The Ministry of Health and Care Services is responsible for the outline of the

national health policy as well as preparing reforms and proposals for legislation (Johnsen 2006).

Recent reforms

List Patient System (LPS) / Regular General Practitioner Scheme (RGP)

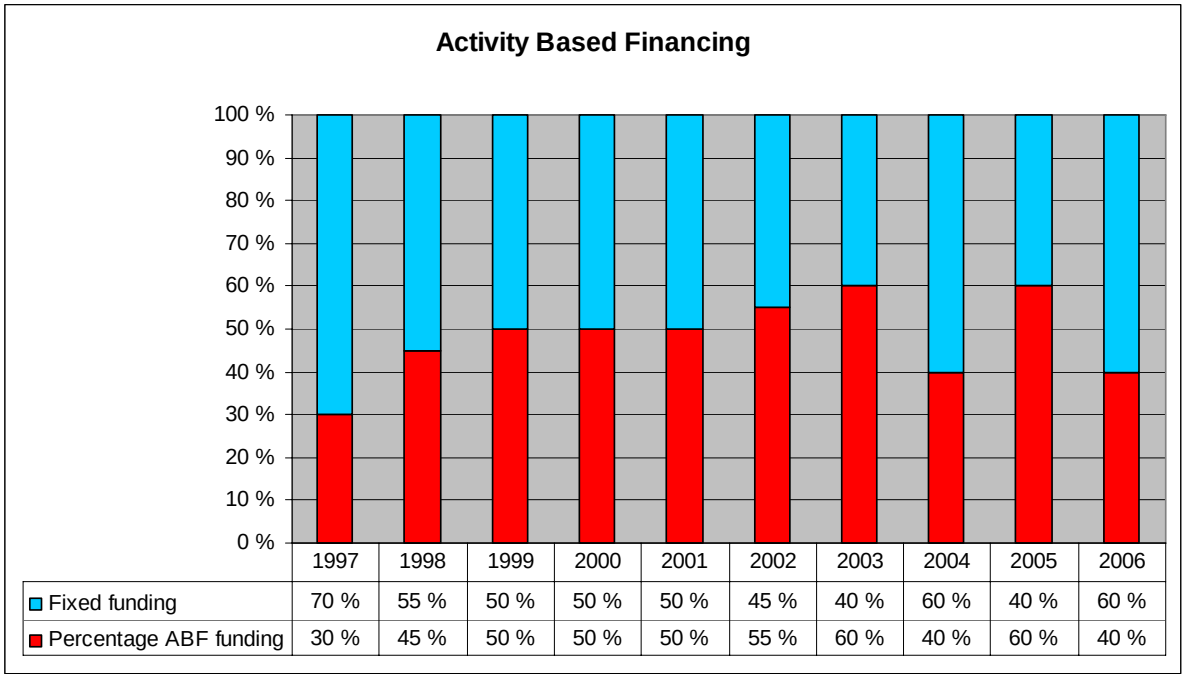
The list patient system was presented in 1990 and started as an evaluation project in Tromsø, Trondheim, Lillehammer and Åsnes. In 1997 the government decided to implement the list patient system throughout the country. After a series of hearing rounds, the government officially implemented the necessary changes from 1. June 2001 (Ot.Prp.nr.99 1998-1999). The goal of the reform was to improve the quality in the primary care, and for the public to have one primary physician.

The list patient system also included that all primary physicians within the system should be private actors instead of being employed by the municipalities. These physicians are financed with a 30% pr capita payment from the local government, and a 70% fee-for-service payment. Of the fee-for-service payment, 40% are from the National Insurance Scheme, and the rest are out of pocket payments from the patients (Grytten, Skau et al. 2005).

Introduction of Activity Based Financing (ABF)

From the last part of the 1980s and to 1997, the payments to somatic hospitals were a combination of block-grants and earmarked resources. The earmarked resources were intended as a way of prioritizing patient-groups. The block-grant could to be used as the hospital wanted. Assumed the block-grant is fixed with hard budged constraints, cost control would be achievable.

In 1997 the funding of somatic hospitals was changed to a partly activity based financing (ABF). The major point with this change was that 30 percent of the block grant should be related to hospital activity. This share was raised gradually to 60 percent in 2003, reduced to 40 percent in 2004, raised again to 60 percent in 2005, and reduced to 40 percent in 2006. Percentages are presented in *Figure 1-1*.



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Fixed funding	70 %	55 %	50 %	50 %	50 %	45 %	40 %	60 %	40 %	60 %
Percentage ABF funding	30 %	45 %	50 %	50 %	50 %	55 %	60 %	40 %	60 %	40 %

Figure 1-1 Activity based financing

One other important legislation concerning the activity based financing is the Patient right legislation, and the right to “free hospital choice”; the patients could choose provider of health care services.

The reasons for implementing an activity based financing was first to increase the number of elective treatments to fulfil the waiting list guarantee. Second, to make sure that the counties spend money meant for health care on health care, instead of other areas they were responsible for i.e. schools and transportation. Third, block grants, without any activity measures to hospitals were seen as an inefficient way of financing (Hagen and Kaarbøe 2004a).

With ABF came a governance problem, and a blame game over the responsibilities for increasing deficits at the county level (Magnussen, Hagen et al. 2007). To deal with these problems, the hospital reform of 2002 was implemented.

1.2.2 The Hospital Reform 2002

In 2002 the central government took over the ownership of public hospitals and specialist care institutions in Norway from the counties (Ot.Prp.nr.66 2001).

The reason for this reform was to address some of the problems within the Norwegian health care system. The main problems were; the long waiting lists for elective surgery, the lack of equity in the supply of hospital services, and a lack of financial responsibility and transparency that led to a blaming-game between the counties and the central government (Hagen and Kaarbøe 2006). The reform included that the Minister of Health was given the responsibility for the management of specialist care, instead of the counties. The central government divided the country in five regions called regional health enterprises (RHE (or regional health authorities, RHA)), to govern and coordinate the health care system. All hospitals in the different regions were transformed to health enterprises, as independent legal objects with responsibilities for personnel and capital (Hagen and Kaarbøe 2006). These actions created a more centralized hospital sector, with state ownership and the minister fiscally responsible (Hagen and Kaarbøe 2006).

The regional level consists of the five regional health enterprises.

- Northern Norway Regional Health Authority (Helse-Nord)
- Central Norway Regional Health Authority (Helse-Midt)
- Western Norway Regional Health Authority (Helse-Vest)
- Southern Norway Regional Health Authority (Helse-Sør)
- Eastern Norway Regional Health Authority (Helse-Øst)

The regions are responsible for the specialized health care provision. This includes somatic and mental health care as well as; laboratory services, radiology and ambulatory services. The regional health authorities own the health enterprises in their region (Johnsen 2006).

The Southern Norway Regional Health Authority and the Eastern Norway Regional Health Authority are currently being merged. The new large region has got a new

board of directors, but is not in charge of the new region yet. In this paper the two regions are held separately.

1.3 Private actors

The Norwegian health care system includes both private not-for-profit and private profit-making actors. Private sector services are in most cases fully embedded in the public system, with some exceptions. Not-for-profit agencies typically include hospitals or institutions set up as trusts that, in principle, are financed and seen as an integrated part of the public health services, i.e. the diaconal trust owned by the Norwegian church. Private profit-making actors have a subordinate role within the Norwegian health care system and were established primarily to complement publicly funded services, for example, plastic surgery (Johnsen 2006). Private hospitals must have a permit to treat patients and the regional health authorities make deals with private hospitals to treat patients (Johnsen 2006).

1.3.1 The rise of a market for private health-services

In the Norwegian healthcare system there have always been some private providers of health services. Private non-commercial hospitals, as for example the diaconal hospital “Diakonhjemmet”, has existed beside the public providers for health care services, and often had a function as a local-hospital. In the Oslo and Akershus area, the private commercial hospitals have existed since the 1990s. This is also one of the reasons that many of the private hospitals are located in this area.

Private contract specialists have also played a role in the Norwegian health care service. In the 1990s the private contract specialists were important healthcare providers (Midttun and Hagen 2006). Treatment processes such as laboratory tests and diagnostic radiology have in a long time been provided by private actors (Hagen, Iversen et al. 2007).

Free hospital choice was implemented from 2001 for the public hospitals. From 1.september 2004 these rights were expanded to also include private commercial hospitals which had contracts with one (or more) of the Regional Health Authorities.

Introduction of DRG

In day-surgery the DRG (Diagnosis Related Groups) system was implemented from 1999 (Lian 2003), private commercial hospitals were implemented in the system from 2001 and may be the reason for the extended use of private commercial hospitals.

1.3.2 The privatization

In the Norwegian Official Report 2003:1(NOU 2003:1) the ideas on privatization of specialist health care services are presented. It states a premise that the private sector should play a role in the specialist health care, because of the positive effects of competition, and the corrective role to the public health care. The regional health authorities could use the private actors as a supplement and an alternative to the production in their own health enterprises. Private actors could also assist a greater diversity in ways of organizing the health care system. The use of private actors will also give the patients a choice of where they want to be treated, and contribute to expand the capacity in the treatments where private actors can use equipment and personnel more efficiently than the public sector. The report also states that a major disadvantage of private actors is the uneven geographical distribution. The highest concentrations of private actors are in the eastern parts of Norway and around the big cities.

Day-surgery by private commercial hospitals

We can see that the private commercial hospitals are mostly established in and around the big cities in Norway. Hence, patients in these areas would use the private hospitals more frequently than rural areas.

To test this hypothesis the percentage of private production versus total production was calculated. The data are patient-data and describes the county the patients are living in. The results are presented in *Table 1-1*.

Table 1-1. Percentage of private production vs. total production

	2002	2003	2004	2005
Østfold	10,29 %	10,61 %	11,96 %	12,01 %
Akershus	37,56 %	18,28 %	11,76 %	12,50 %
Oslo	18,87 %	17,70 %	11,61 %	12,18 %
Hedmark	2,66 %	1,93 %	3,30 %	4,00 %
Oppland	1,69 %	1,75 %	3,70 %	6,24 %
Buskerud	8,38 %	11,97 %	8,19 %	7,92 %
Vestfold	4,27 %	6,91 %	4,56 %	4,96 %
Telemark	4,91 %	5,07 %	1,81 %	1,87 %
Aust-Agder	0,76 %	1,24 %	0,86 %	0,73 %
Vest-Agder	1,96 %	2,27 %	1,25 %	1,37 %
Rogaland	0,78 %	1,27 %	5,36 %	9,19 %
Hordaland	0,59 %	1,32 %	0,93 %	0,77 %
Sogn og Fjordane	1,23 %	1,11 %	0,75 %	0,76 %
Møre og Romsdal	4,10 %	9,44 %	11,50 %	8,82 %
Sør-Trøndelag	0,83 %	6,35 %	15,75 %	10,23 %
Nord-Trøndelag	0,19 %	1,86 %	4,97 %	3,29 %
Nordland	0,78 %	0,64 %	0,84 %	1,07 %
Troms	0,10 %	0,14 %	0,50 %	1,35 %
Finnmark	0,05 %	0,11 %	0,39 %	0,75 %

We can see from *Table 1-1* that the counties that use the most private providers of private day-surgery versus total providers are Oslo, Akershus, Østfold. But by looking at the trends, we can se a levelling-out between the counties, especially from 2004 to 2005. The reason may be the extension of the patient rights act of 1.9.2004, which states that the patients can choose other RHEs contracts. This makes it possible to produce in one region even if the contracts are in another region. We can also see a drastic decline in the percentage of private production versus total production of day-surgery in Akershus and Oslo from 2002 to 2004. It is possible that the reason for this decline is that in these areas the private commercial hospitals have had contracts on production since the 1990s and therefore were more lucrative for establishment of private commercial hospitals than other regions. We can se that the numbers are levelling out gradually when all regions get the possibility for contracts with private commercial hospitals.

Growth of private commercial hospital production

Due to the government's policy on more use of private hospitals (St.meld.nr.5 2003-2004), we could assume that the use of private hospitals has grown.

To see if this is a correct assumption the percentage growth each year of number of day-surgery treatments in both public and private hospitals were taken. The results are presented in *figure 1-2*, and *figure 1-3*

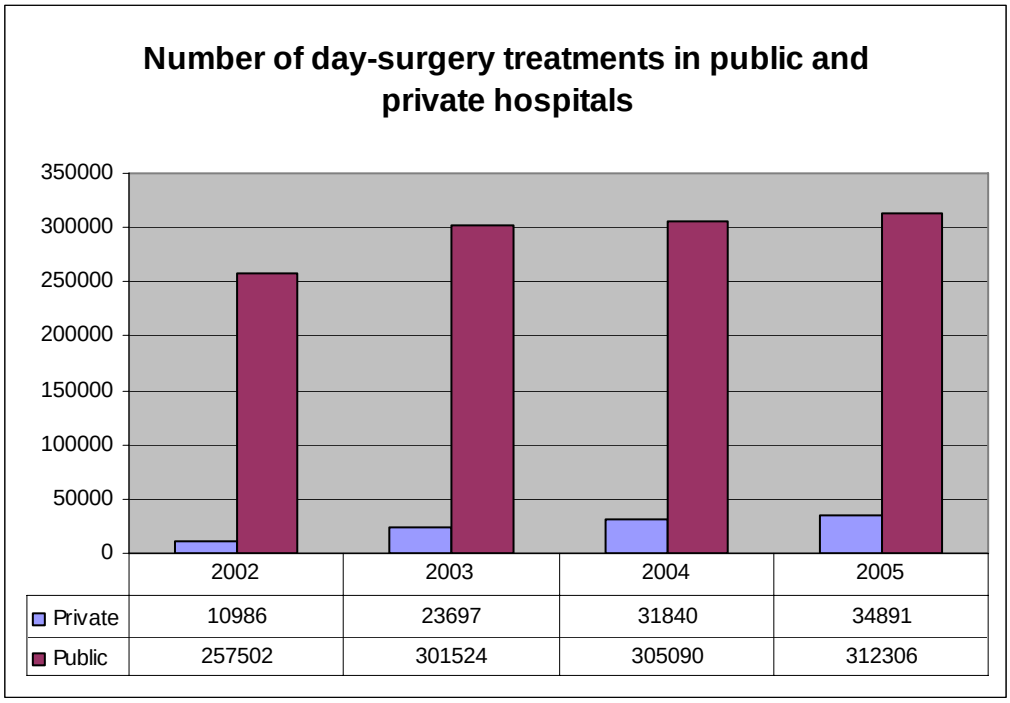


Figure 1-2 Number of day-surgery treatments in public and private hospitals

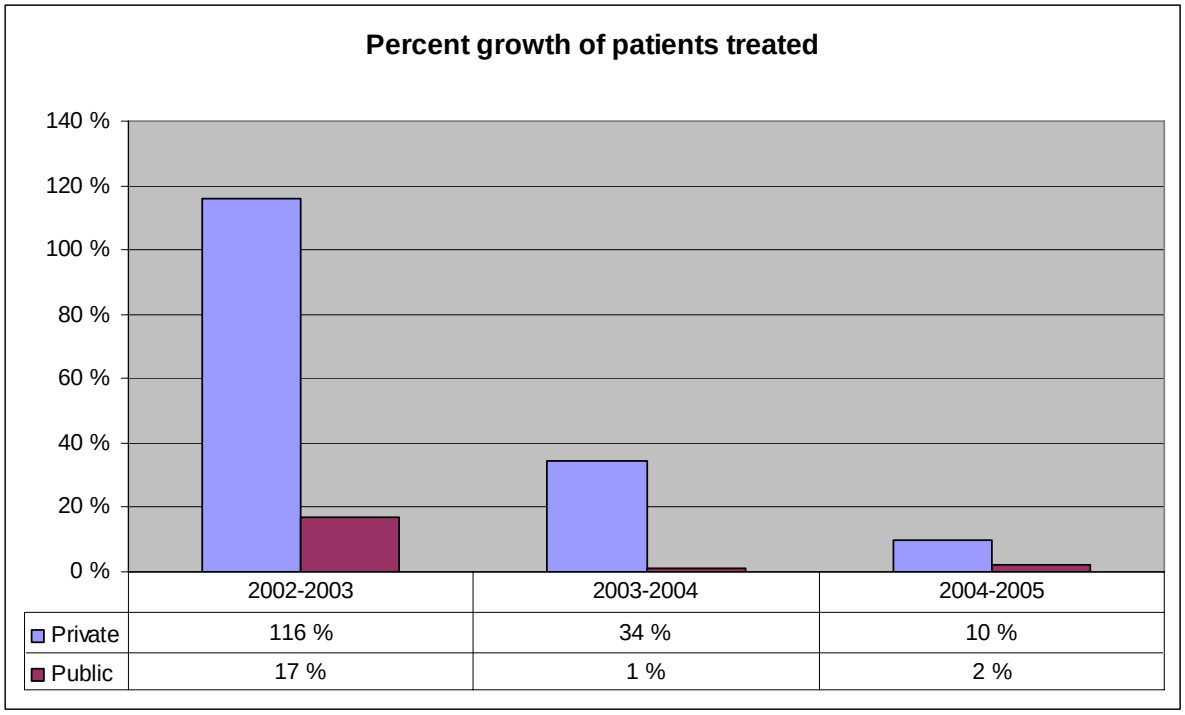


Figure 1-3 Percent growth of patients treated in public hospitals and private commercial hospitals

As seen in *figure 1-3*, the growth of patients treated in private hospitals has increased each year much more than the patients treated by public hospitals. The growth is present in both private and public sector. The extended use of private hospitals is as assumed earlier, and stated in (St.meld.nr.5 2003-2004).

1.3.3 Topics for research

In this paper I will look at the private commercial hospitals with day-surgery contracts with regional health authorities. I will look at data from the year 2001 to present time, but I am to some extent restricted to 2005 due to lack of data.

The topic “if, and in what extent, privatization and competition within the health care service has effected the costs” can be looked upon from different angles. One way of enlightening this topic is to see the DRG-cost over time, and compare this with institutional behaviour in the same period.

The topic “If, and in what extent, privatization and competition has led to selection of patients” includes to see if there are differences in the use of private commercial hospitals and public hospitals regarding patient age.

1.4 Theories / Models

The principal-agent model is one of the models we can use when analyzing competition on contracts between hospitals, and between hospitals and regional health enterprises. The main point in this model is that we have a principal (in our case the regional health enterprise) and an agent (in our case the private hospitals). The principal gives orders to the agent who can then choose how to act. The agent has some advantages over the principal regarding information, and can use this to lower the efficiency or gain other profits. By using a tender, agents will present offers, and in a perfect world, show their true costs to the principal. The principal can then choose the agent with the lowest costs. In the health care system there can be problems regarding cost-comparison between public and private institutions. This is because the public hospitals have other tasks as education, research, acute-care etc in their production. Due to the admission of patients and acute care, public hospitals have a large and extensive equipment-park. This results in large fixed costs. Using this equipment to its full extend could lead to less use of the private marked.

There are several versions of the principal-agent model, but they all have some similarities:

- The model includes some form of contract management; one example could be time-restricted contracts.
- Competition is a primary goal in the principal-agent model; competition could be achieved by tender.

More on the theory and the hypothesis is described in chapter 2.

1.5 Material and method

The data in this thesis are collected from both primary and secondary sources.

The primary data is collected from the five Regional Health Enterprises and contains data on budget processes and costs. This data was gathered by using a questionnaire sent to representatives for each of the Regional Health Enterprises asking about the costs and budget processes. The contracts between the RHEs and Private commercial hospitals were also used as material in this paper and provided by the regional health enterprises.

We are missing data from Health South, but all the other regions have delivered good and extensive data. There could be some imperfections in the data as people understand questions in a slightly different way.

The secondary data is gathered from The Norwegian Patient Register (Norsk Pasientregister – NPR). NPR gets its data directly from the hospitals who report data on patient consultations. The data is relatively extensive controlled nevertheless errors in the datasets can occur.

When comparing hospitals, counties and regions, from the NPR data, there could be some differences due to different organization of the services. The dataset only contains private actors which are licensed as hospitals. For some patient-groups there could be some differences between areas as the patients are treated by private specialists and not private hospitals. Some differences could also occur due to different registration-practices.

Which DRGs are being produced at the private hospitals, how the patients are distributed regarding age and gender, and the distribution between different parts of Norway will be described descriptively.

1.5.1 The questionaire

The questionnaire is based on both qualitative and quantitative questions. The quantitative questions consists of a survey of how many contracts the Regional Health Enterprises have with private commercial hospitals, as well as the RHEs expenditures on these contracts. The qualitative questions are on the topics of budget-processes and how the contracts are developed, and generally the development of the cost and activity. The questions in the questionnaire were both close-ended and open-ended.

Open-ended questions

Open-ended questions have advantages and disadvantages. One advantage is that the respondents can provide own answers and express their opinions in their own words (Kumar 2005).

Close-ended questions

The close-ended questions have, like the open-ended questions, advantages and disadvantages. The main advantage with these kinds of questions is that the investigator gets data which is more easily comparable between different respondents (Kumar 2005).

1.6 Structure of the paper

I will continue with looking at the theories concerning markets and principal-agent models as well as a description of the privatization of the Norwegian health care system before I continue with a regression analysis of the data gathered, and comments on the results.

2. Theory

2.1 Health care services and competition

The research questions are: “If, and to what extent, privatization and competition within the health care service has effected the costs” and “If, and to what extent, privatization and competition has led to selection of patients”. Competition can be understood by principal-agent theory where a main point is that in this case the private hospitals may take advantage of information to lower efficiency or take out profit in different ways. By presenting the private hospitals for competition, going from a standard price all hospitals are getting, to a tender, the Regional Health Enterprises would under ideal conditions be able to see the private hospitals real costs, and make contracts with the hospital with the lowest costs and also prevent selection of patients.

I will in this chapter present the conditions for a private marked as well as the theoretical basics of the principal-agent model. At the end of this chapter I will present the hypothesis on the basis of the theory presented.

2.2 Private markeds

There are several conditions which have to be fulfilled for private production of services. The decisive factor for privatization is if it is fit for competition. The following conditions have to exist for an effective competition. When all these conditions are met, we have what we call a perfect competition:

- Complete information.
- Many suppliers and buyers
- Similar product

- Free establishment
- Small or no costs regarding buying and selling the product
- Free mobility of workforce and other factors in the production
- Elasticity in both supply and demand.

In the real world, no markets fulfil all these conditions completely. Some central points on free competition are not fulfilled when looking at the health care system. In the health care system there is a lack of information (Stamsø 2005). The patient does not know what to request when they are ill. Differences in supply and demand are also a problem. Patients have often no qualification to assess their own needs (Stamsø 2005). And if the decision for treatment-method was handed over to the patient, many would choose treatment which not exactly fulfilled the need for the patient. Inelastic demand is also an effect regarding health (Stamsø 2005). If the prices for a treatment become very large, the demand for the treatment would not decline. Especially if the sickness is severe, people would pay the price for the treatment (Stamsø 2005). There are also ethical and value issues concerning the marked for health care services, as an equal possibility for all to get treatment, regardless of wealth and income.

Because of this, we are not using the market in its classical form within the health care services. Instead we have a public financing, production and control, but gradually introducing some market elements and mechanisms.

The use of market mechanisms in the health services may occur at two levels;

1. In the relationship between patient and provider
2. In the relationship between provider and financer (i.e. government or insurance-company

In the Norwegian reforms we can see aims for market mechanisms in both the relationship between patient and provider (free hospital choice and

"Fastlegeordningen" (patient list system)) and provider and financier (activity based financing and enterprise-organizing).

In this paper I will look at the relationship between provider and financier; between Regional Health Authorities and private commercial hospitals.

2.3 Principal-Agent model

2.3.1 Literature review

The foundation for the principal agent model was created on dilemmas of dealing with incomplete information within insurance industry contracts (Spence and Zeckhauser 1971), but the theory was soon implemented in other dilemmas associated with contracting problems (Jensen and Meckling 1976; Harris and Raviv 1979). Some practical principal-agent problems which have been theoretically presented are "sharecropping", where contracts are being created between a land owner and a farmer (land cultivator). An early work with this is Stiglitz (Stiglitz 1974). There is also extensive literature for principal-agent models within the insurance, and some of the concepts within the model are from the insurance literature i.e. "moral hazard". Sappington (Sappington 1991) provides a discussion of principal agent incentive problems. Extensive examples for use of the principal agent model could be found in Laffont (Laffont and Martimort 2002; Laffont 2003)

2.3.2 The Basic Model

The basic model within the principal-agent theory is that a consumer or a firm, called principal, wants to delegate the production of a good to an agent. The output of the agent's production can be described as $q(e,Q)$, where q is a function of effort (e) and a stochastic element (Q),an element of nature; things you can not control. The agent's utility function $U(e,w)$ is a function of effort and wages (w). The principal's utility

function can be described by the function V(q-w) which is the difference between production (in monetary terms) and wages paid.

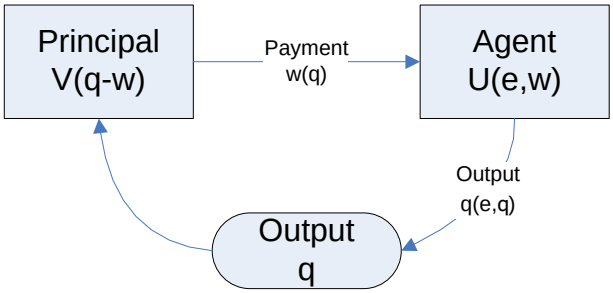


Figure 2-1 Basic principal agent model

The principal is positive to output (+) (or production) but negative to wages (-). The agent is negative to the effort (-) and positive to wages (+). This is because the principal wants high production with low payment, and the agent wants high payment with low effort (Rasmusen 1989).

In the simplest term is asymmetric information a term for when information is available to different degrees between the principal and the agent. This could be that the principal has problems controlling the agent's behaviour or effort (Hendrikse 2003). The classical example of a principal agent problem, and asymmetric information, is the relationship between a physician and a patient. Where the physician is the agent and treats the patient, which is the principal. The agent has more knowledge than the principal; therefore the principal can't control the situation, and must trust the agent's choices (Hendrikse 2003).

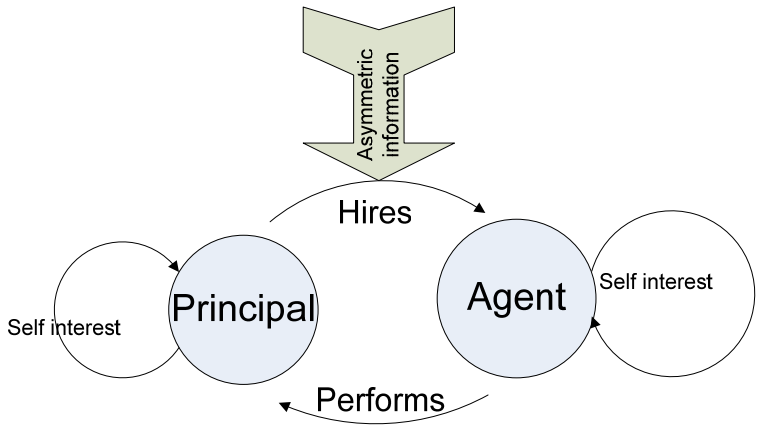


Figure 2-2 Asymmetric information

The moral hazard, or hidden action problem, is also important in the principal agent model. Moral hazard is also called hidden action. The main point is that the asymmetric information leads to use or exploitation of the information. Because the principal can't control the agent, the agent chooses to do what is preferable for him, which often is reducing effort or maximize profit (Hendrikse 2003).

Agents have different characteristics. While some would take a contract, others will reject the same contract. Only agents with certain characteristics will accept the contract. This is called adverse selection and is the beginning of the game (Hendrikse 2003). One way the adverse selection differs from hidden action is that the principal can see the agent's decision, to take or reject the contract. The agent knows the motivation for the decisions made while the principal doesn't know exactly what is guiding the agent (Hendrikse 2003).

2.3.3 Model and Hypothesis

The principal-agent model is presented in *figure 2-3*. The Adverse selection happens in the level on top, where an agent chooses to accept or reject a contract. The next level is where the moral hazard can occur. The agent chooses high or low effort. The next step is a stochastic element, the things you can't control, which leads to a good or a bad result.

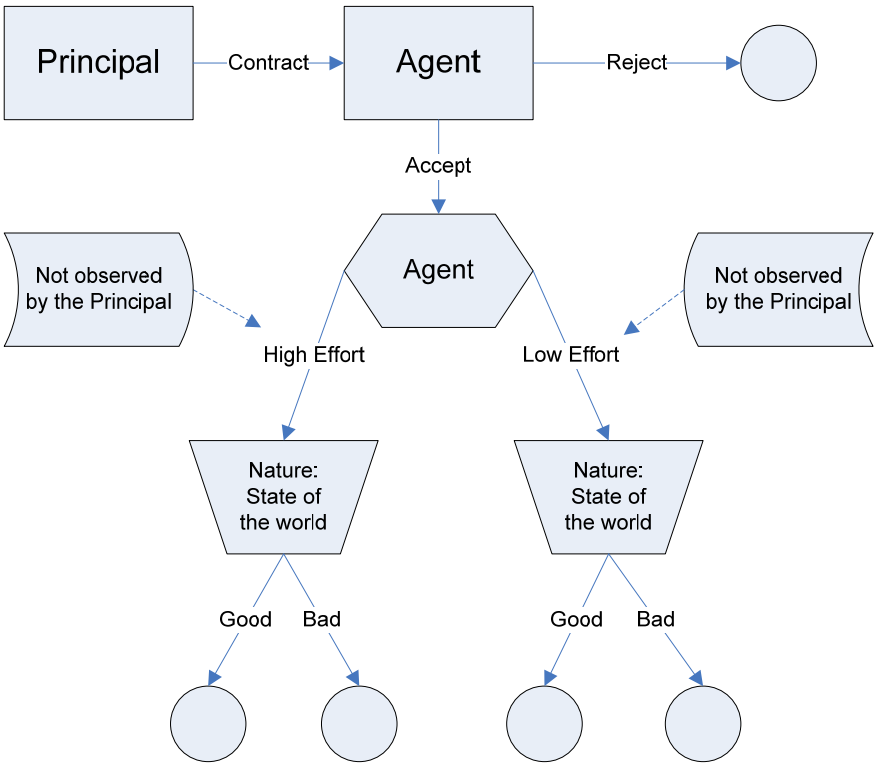


Figure 2-3 Principal-agent model with moral hazard

Hypothesis

When introducing competition on day-surgery treatment, we could assume that the costs are reduced. The principal's contract with an agent is the subject for competition, and agents have to accept contracts with lower payments or profits. The problem with moral hazard in this game is low as the principal has a time restricted contract with the agents, and could choose to not renew the contract or choose another agent after the time-period. The possibility for reduction of quality is also low as the contracts are frequently renewed. Therefore we could say that the quality is not reduced, and the agent will perform with high effort, this also because the payments are activity based.

When going from predetermined DRG-costs, like the one given to the public hospitals, to a tender on DRG-costs, we could assume a reduction in costs. This is because the predetermined DRG-costs are based on the costs of public hospitals where a lot of other costs also are included like; emergency care, ambulatory care and

education. When using the predetermined DRG-cost we could assume high profitability, or low efficiency by the private commercial hospitals.

When introducing competition, we could also assume a shift in the type of patients treated. In order to compensate for the lower payments, the agents choose healthier and less complicated patients. Since it may be harmful for the agent to reduce the quality of the services because they may loose the contract in the next period, the agent wants the easy patients and “easy money”. Often are younger patients healthier and easier to treat than older patients, therefore we could assume that the private providers treat younger patients than the public providers. We can divide the problems with selection into three main groups, creaming, skimping and dumping. Creaming is referring to an over-provision of services provided to low-cost patients, skimping is referring to under-provision of services to high cost patients and dumping is referring to not treating high cost patients or patient groups (Ellis 1998).

The main hypothesis will be as follows:

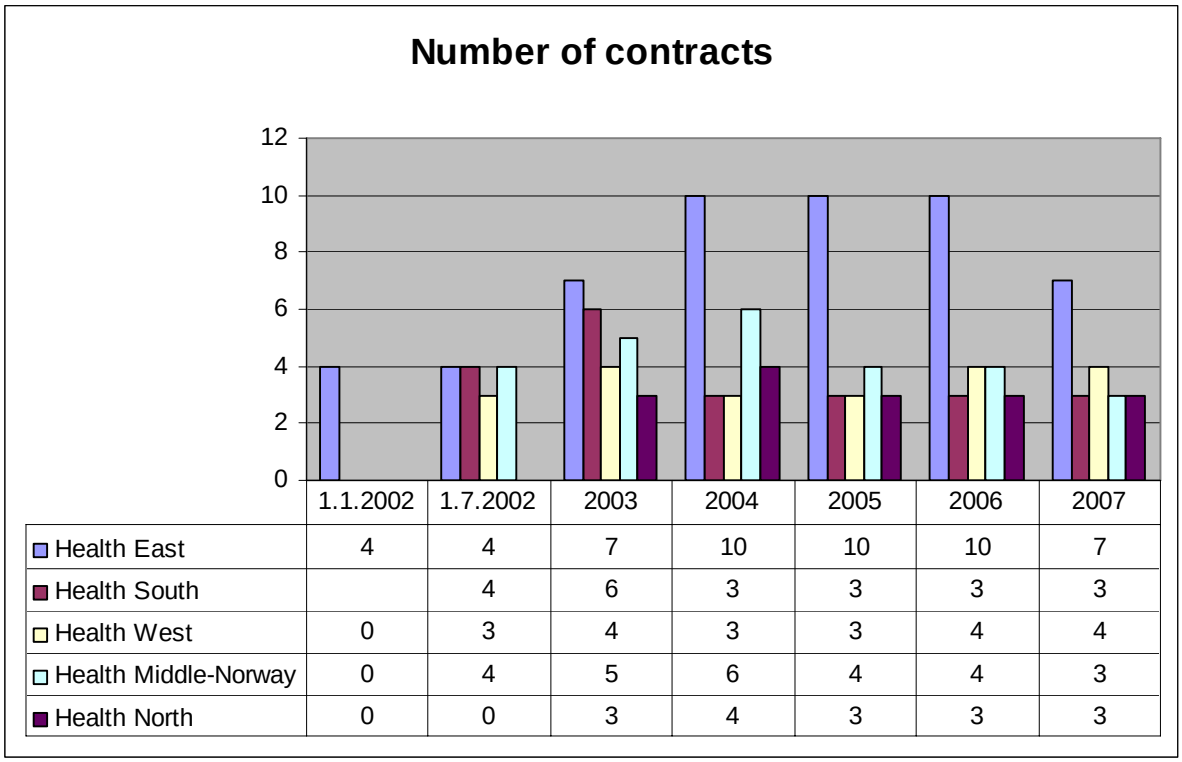
- Due to the privatization and competition on day-surgery we could assume that the prices pr DRG have been reduced over the years.
- Due to competition which leads to cost reduction and again to selection of patients, private commercial hospitals treat younger patients than public hospitals in day-surgery. They choose low risk patients over high risk patients (creaming).

3. Descriptive Statistics

In this chapter I will present the data collected on; contracts, activity, DRG costs, and see if there are some trends concerning primarily costs and selection. I will also briefly address some descriptive elements of the data gathered.

3.1 Number of contracts

The Regional health authorities make contracts with private commercial hospitals for delivering day-surgery treatments. The numbers of contracts each year for the different regional health authorities are presented in *Figure 3-1*



	1.1.2002	1.7.2002	2003	2004	2005	2006	2007
Health East	4	4	7	10	10	10	7
Health South		4	6	3	3	3	3
Health West	0	3	4	3	3	4	4
Health Middle-Norway	0	4	5	6	4	4	3
Health North	0	0	3	4	3	3	3

Figure 3-1(the numbers for Health South are collected from Health South's Yearly reports, all other numbers are from the questionnaire)

It is clear that Region Health East has the highest number of contracts. Reasons for this may be that there are many private commercial hospitals in the Health East area, as a result they are using this capacity to deliver day-surgery. We can see more easily

in *figure 3-2* that we have a peak in 2004 with a total of 26 contracts, reduced to a 20 contracts in 2007.

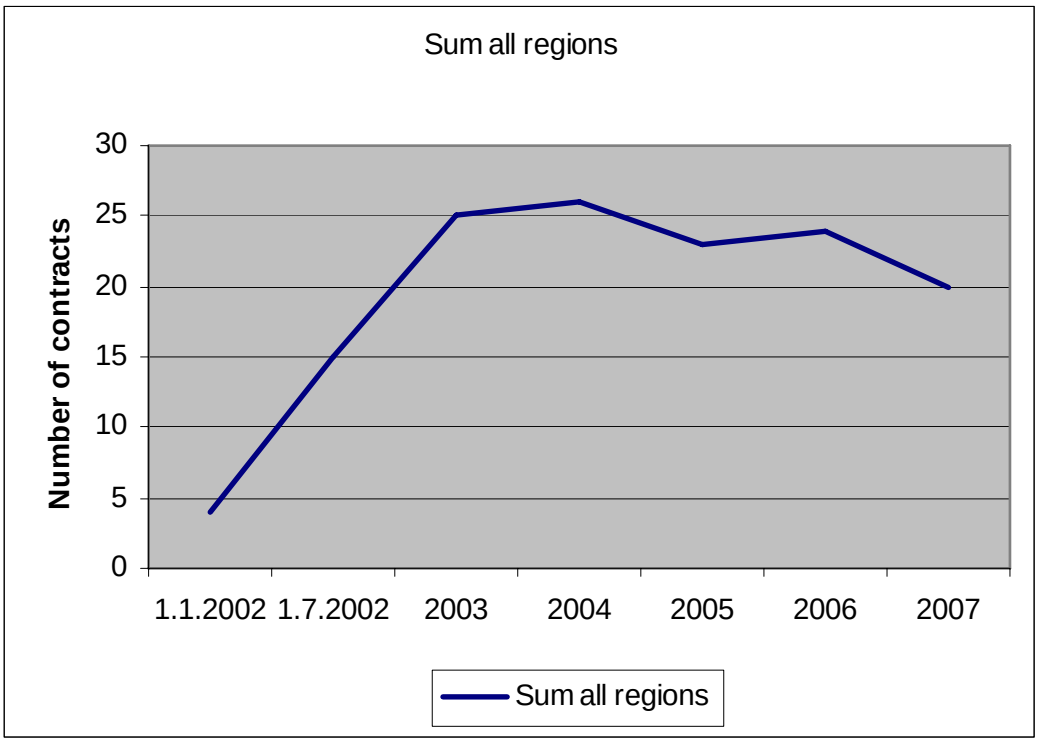


Figure 3-2 Number of contracts, sum all regions

3.2 Which DRG-groups are treated at private commercial hospitals?

The DRG-groups produced as day surgery by private commercial hospitals include almost every day-surgery DRG. There are about 39 DRG-groups which are not represented (-) by the private commercial hospitals of day-surgery in the year 2002 to 2005, these are represented in *table 3-1*. This is about 24% of the total numbers of DRG-groups represented in the dataset of day-surgery (total number of DRG-groups are 165 in this case). The DRG-coding-list of day-surgery treatments can be found in the appendix.

DRG	Priv	Publ	DRG	Priv	Publ	DRG	Priv	Publ	DRG	Priv	Publ
4	+	+	**156**	-	+	**228**	+	+	**338**	+	+
6	+	+	**157**	+	+	**229**	+	+	**339**	+	+
7	+	+	**158**	+	+	**230**	+	+	**340**	+	+
8	+	+	**159**	+	+	**231**	+	+	**341**	+	+
36	+	+	**160**	+	+	**232**	+	+	**342**	+	+
37	-	+	**161**	+	+	**233**	+	+	**343**	+	+
38	+	+	**162**	+	+	**234**	+	+	**345**	+	+
39	+	+	**163**	+	+	**257**	+	+	**354**	-	+
40	+	+	**166**	-	+	**258**	+	+	**355**	+	+
41	+	+	**166N**	-	+	**259**	+	+	**356**	+	+
42	+	+	**167**	-	+	**260**	+	+	**357**	-	+
50	+	+	**168**	-	+	**261**	+	+	**358**	+	+
51	+	+	**169**	+	+	**262**	+	+	**359**	+	+
52	+	+	**170**	+	+	**265**	+	+	**360**	+	+
53	+	+	**171**	+	+	**266**	+	+	**361**	+	+
54	+	+	**193**	-	+	**267**	+	+	**363**	+	+
55	+	+	**194**	+	+	**268**	+	+	**364**	+	+
55A	+	+	**195**	+	+	**269**	+	+	**365**	+	+
55B	-	+	**196**	-	+	**270**	+	+	**377**	-	+
56	+	+	**210**	+	+	**286**	-	+	**381**	+	+
57	+	+	**211**	+	+	**288**	+	+	**392**	-	+
58	+	+	**212**	+	+	**288A**	+	+	**394**	+	+
59	+	+	**213**	+	+	**288B**	+	+	**401**	-	+
60	+	+	**214**	+	+	**291**	-	+	**402**	-	+
61	+	+	**214B**	+	+	**292**	-	+	**408**	+	+
62	+	+	**214C**	+	+	**293**	+	+	**415**	+	+
63	+	+	**215**	+	+	**303**	-	+	**424**	+	+
76	-	+	**215B**	+	+	**304**	-	+	**424N**	+	+
77	+	+	**215C**	+	+	**305**	-	+	**439**	-	+
112	+	+	**216**	+	+	**306**	-	+	**441**	+	+
114	-	+	**217**	+	+	**307**	+	+	**442**	+	+
116	-	+	**218**	+	+	**308**	+	+	**443**	+	+
117	-	+	**219**	+	+	**309**	+	+	**458**	-	+
118	-	+	**220**	+	+	**310**	-	+	**459**	-	+
119	+	+	**221**	+	+	**311**	+	+	**461**	+	+
152	-	+	**222**	+	+	**312**	-	+	**493**	+	+
153	+	+	**223**	+	+	**313**	+	+	**494**	+	+
154	+	+	**224**	+	+	**314**	+	+	**501A**	+	+
154B	-	+	**225**	+	+	**315**	-	+	**501B**	+	+
155	+	+	**226**	+	+	**336**	-	+	**502**	-	+
155B	+	+	**227**	+	+	**337**	-	+	**509**	+	+
									521	+	+

Table 3-1 DRGs treated in the year 2002-2005 in Day-surgery. Represented:"+" , Not represented:"-"

This means that of the total amount of available DRG-groups, the private are qualified or able to perform about ¾ of the DRG-groups.

The 10 largest DRG-groups for private commercial hospitals in the year 2002 to 2005 are presented in *table 3-2*

Table 3-2 DRGs treated most commonly by commercial hospitals. Total 2002-2005

DRG	Private	Public	Total
222	17916	60369	78285
112	8931	34471	43402
224	7464	30637	38101
270	6056	34515	40571
261	5091	6733	11824
39	3878	102109	105987
119	3704	26448	30152
36	3033	26206	29239
225	3028	21449	24477
40	2795	34423	37218
227	2772	22997	25769

We can see that group 222 (Knee procedures w/o cc) is the definitively largest group for private hospitals.

Table 3-3 Percent private production of DRG-group of total production 2002-2005

DRG	Private	Public	Total	Percent
288B	2029	892	2921	69,46 %
288	717	510	1227	58,44 %
261	5091	6733	11824	43,06 %
343	1765	3439	5204	33,92 %
222	17916	60369	78285	22,89 %
268	1811	6852	8663	20,90 %
112	8931	34471	43402	20,58 %
224	7464	30637	38101	19,59 %
443	488	2141	2629	18,56 %
56	2412	10624	13036	18,50 %

Table 3-3 shows that some DRG-groups are used more of private than public hospitals. The DRGs which have a higher private treatment than public treatment are the DRGs 288B and 288, operations for adiposities.

3.3 Contracts

3.3.1 Budget processes

We can divide the different process types into four groups:

- Cost Comparison (C): Budget is based on comparison of costs with different actors, public or private, without selective contracts
- Tender (T): Budget based on cost comparison with other actors, with selective contracts
- Negotiations between private and regional health authorities (N)
- No cost comparison was done, (fixed prices) (0 cases)

Budget processes	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Health East	*	T	T	*	T	T
Health South	*	*	*	*	*	*
Health West	*	N	N	T	T	T
Health Middle-Norway	*	C	C	C	T	C
Health North	*	*	T	T	T	T

Table 3-4 Budget processes * Not available

We can see that tender is more and more used, and has become the most used form for budget processes. Within this group, the RHAs emphasize that not only price, but quality and accessibility were a criteria for which private hospitals got the contract. Some regions are also mentioning that they have had some problems concerning tender in their region. The reason for this is that the private hospitals often have only one contract with one regional health enterprise, and the result of who gets the contract could be dependent for the hospitals existing or non-existing. The marked situation is therefore not balanced, which is a condition for having a tender with one winner.

Health East comments that in the beginning, the ABF-refund was extremely guiding for how the private hospitals were pricing their services, as they calculated this part as “free” for the regional health enterprise. Gradually this has reduced in importance as the private hospitals figured out that they competed directly with each other on price, and that the RHE didn’t look at the ABF-refund as part of the offers. Health region East is in the opinion that prices have been dropping, and now reflects a more correct picture of the cost of treating the patients.

Health East are also emphasising that the last couple of years there has been a focus on patient rights and treatment-guarantees. This has also affected the private hospitals, which also have to do right prioritizing, handling of waiting lists, and treatment of patients to avoid guarantee violation.

Contracts

There are different ways of creating a contract; we can separate the contracts into four different groups:

1. No cap on budget size and activity (alt. 1.)
2. Cap on budget size, but not on activity (alt. 2.)
3. No cap on budget size, cap on activity (alt. 3)
4. Cap on both budget size and activity (alt. 4)

Contracts	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Health East	*	1	3	3	3	3
Health South	*	*	*	*	*	*
Health West	1	1	1	1	1	3
Health Middle-Norway	*	1	1	1	4	4
Health North	*	*	2	2	2	2

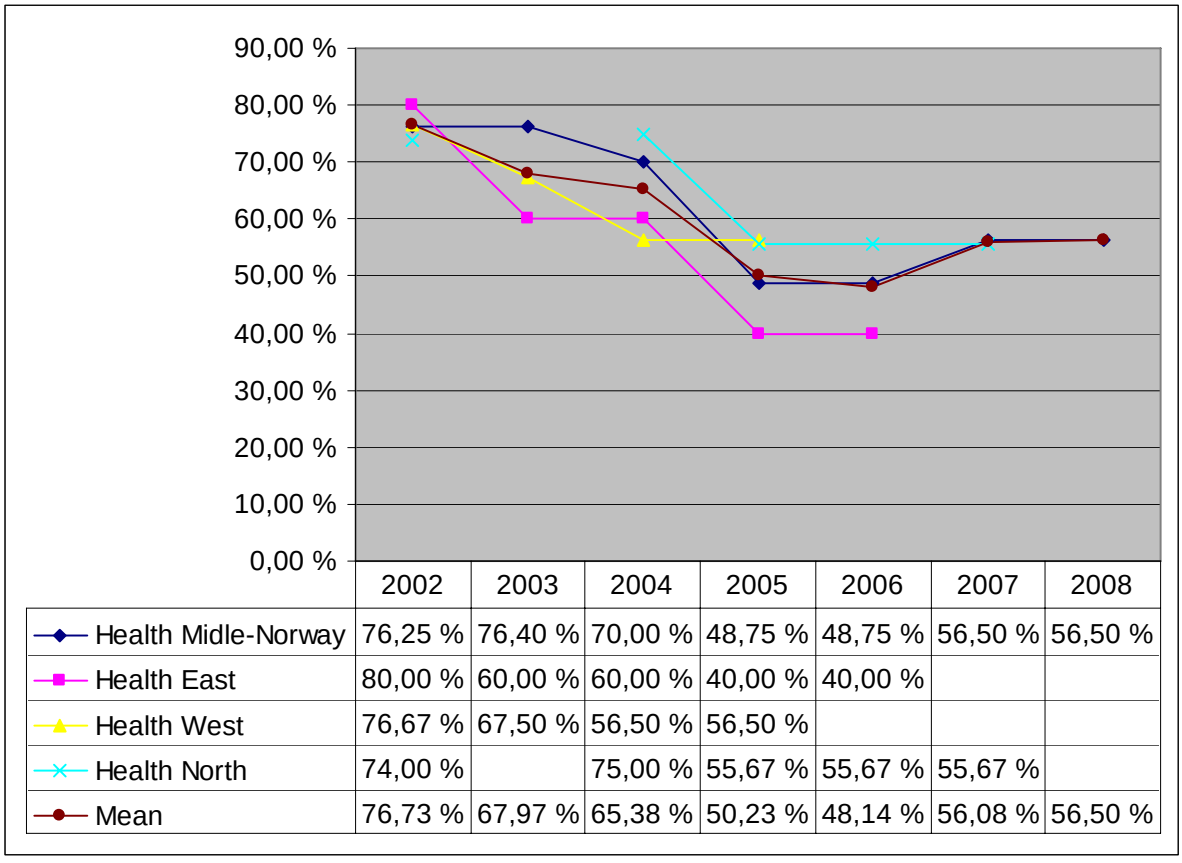
Table 3-5 Contract types **Not available*

We can see from *table 3-5* that in 2002 the regions had mostly no cap on budget size and activity. This changes in 2003 when Health East puts a cap on the activity for the

private hospitals, and Health North puts a cap on the budget sizes. Health South is keeping no cap on budget size or activity all the way through 2005 but starts in 2006 to have a cap on activity.

3.4 Price

Data on the prices are collected from the contracts between the regional health enterprises and the private hospitals. The data presented in *figure 3-3* is the un-weighted mean percentage refund of all DRGs combined included in contracts for each region.



	2002	2003	2004	2005	2006	2007	2008
Health Midle-Norway	76,25 %	76,40 %	70,00 %	48,75 %	48,75 %	56,50 %	56,50 %
Health East	80,00 %	60,00 %	60,00 %	40,00 %	40,00 %		
Health West	76,67 %	67,50 %	56,50 %	56,50 %			
Health North	74,00 %		75,00 %	55,67 %	55,67 %	55,67 %	
Mean	76,73 %	67,97 %	65,38 %	50,23 %	48,14 %	56,08 %	56,50 %

Figure 3-3 Mean percentage refund pr DRG-point for private hospitals.
**Health South is missing data*

We can see that the mean price weight pr DRG has been reduced from 2002 to 2006, (for 2007 and 2008 the numbers are predicted from the regional health authorities.) What the reduction in practice means, is that the cost pr DRG is being reduced. This

results in cheaper treatments for the regional health authorities. Some regions are in fact “earning” money on the use of some private providers, as the payment per treatment is lower than the refund the regional health authorities are receiving. The evolvement in monetary terms for each year is shown in *figure 3-4*.

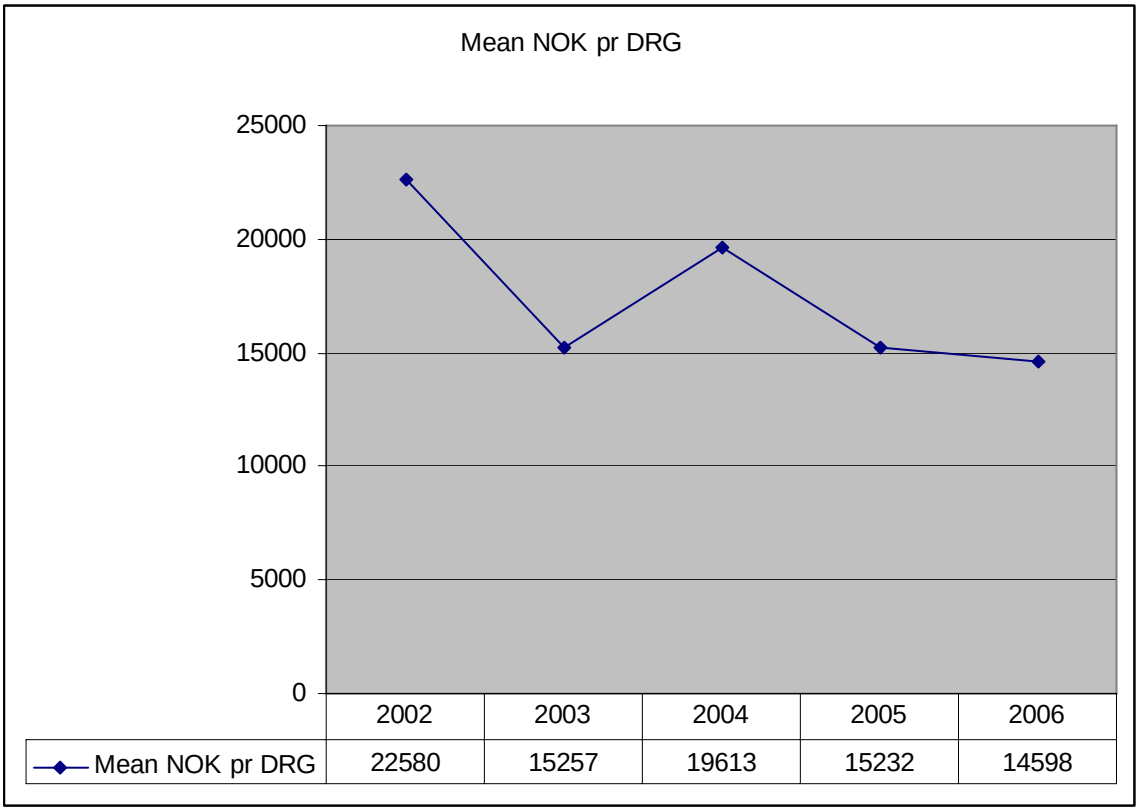


Figure 3-4 Mean NOK pr DRG-point

Here we can see that the mean price pr DRG provided by private hospitals in 2002 was 22580 NOK, this is reduced to 14598 NOK in 2006, a reduction on about 35%. The prices presented in *figure 3-4* are actual prices for each year.

The principal-agent theory states that if you introduce competition the principal would see the real costs, and act accordingly. We can see that the prices were relatively high in 2002 and gradually reducing through the years up to 2006. Chapter 4 contains an analysis to see if this reduction in costs really is the case.

4. Cost effects

Hypothesis: Due to the privatization and competition on day-surgery we could assume that the prices pr DRG have been reduced over the years.

4.1 Empirical model

Referring to the principal-agent model we could say that the costs pr patient (Cost) the regional health enterprises have to pay is dependent on which type of process (Pro) is being used (*table 3-4*). The weighting (WEIGHT) of the DRGs treated may be a measure of how complex and resource-demanding the treatments are. Differences in regions (RHE) can be a factor as well as which year (YEAR) the treatments were given, both regions and years treated as dummy-variables. A regression equation could be like this:

$$Cost = b_0 + b_1*Pro + b_2*WEIGHT + b_3*RHE + b_4*YEAR$$

The independent variables RHE and YEAR are being translated into the independent variables; EAST, WEST, MIDDLE and d2003, d2004, d2005 as dummy variables. Region South is filtered out as the data is missing for this region. NORTH and d2002 are being used as reference categories.

From the datasets from the Norwegian patient register combined with the answers from the questionnaire we get these descriptive statistics:

Descriptive Statistics					
	N	Min	Max	Mean	Std. Dev
Cost	81479	40	80	58,87	12,80
Pro	87825	0	3	1,39	0,85
WEIGHT	101414	0,17	5,26	0,80	0,42
RHE	101414	0	6	2,09	1,28
Y	101414	2002	2005	2003,8	1,00
EAST	101404	0	1	0,49	0,50
SOUTH	101404	0	1	0,20	0,40
WEST	101404	0	1	0,07	0,26
MIDDLE	101404	0	1	0,22	0,42
NORTH	101404	0	1	0,02	0,14
d2002	101414	0	1	0,11	0,31
d2003	101414	0	1	0,23	0,42
d2004	101414	0	1	0,31	0,46
d2005	101414	0	1	0,34	0,48
Valid N (listwise)	67900				

Table 4-1 Descriptive Statistics for the Cost analysis

When the linear regressions later in this paper are being used, the region SOUTH is filtered out as we are missing data on Cost and Processes on this region.

4.2 Empirical results

Linear regression

The linear regression analysis examines the relation of a dependent variable to different independent variables. The linear regression analysis estimates the coefficients of a linear equation that best predicts the value of the dependent variable. To do a linear regression the assumption has to be made that for each value of the independent variable, the distribution of the dependent variable must be normal.

Output

The analysis consists of data from 2002 to 2005 and includes only day-surgical procedures produced by private commercial hospitals. The model is estimated via ordinary least squares regression (OLS) and the results are reported in *table 4-2.*

Variables	B	Std. Error	Sig.
(Constant)	112,370	0,118	0,000
Pro	-8,574	0,044	0,000
WEIGHT	-0,024	0,025	0,348
EAST	-16,736	0,065	0,000
WEST	-5,429	0,070	0,000
MIDDLE	-9,098	0,069	0,000
D2003	-18,333	0,036	0,000
D2004	-26,053	0,048	0,000
D2005	-37,831	0,034	0,000
Adjusted R Square	0,963		

Table 4-2 Regression, Dependent variable: Cost, Independent variables: Pro, WEIGHT, EAST, WEST, MIDDLE, d2003, d2004, d2005. Reference dummy variable: NORTH, d2002

The "Adjusted R-square" in *table 4-2* tells us that 96,3% of the variance in the dependent variable (Cost) is explained by variations in the independent variables.

The *table 4-2* provides information on the effect of the individual variables (the column "B") on the dependent variable and the confidence with which we can support the estimate for each value ("Sig."). The column "B" shows the values for the regression equation for predicting the dependent variable from the independent variables. The regression equation is:

$$Cost = b_0 + b_1*Pro + b_2*WEIGHT + b_3*EAST + b_4*WEST + b_5*MIDDLE + b_6*d2003 + b_7*d2004 + b_8*d2005$$

Each value in the column "B" are effects on the cost within the specific region and within the specific years. Each of the regression coefficients are representing the amount the dependent variable (cost) changes when the corresponding independent variable changes 1 unit.

Since the significance level for weight is 0,348 and much higher than 0,05 we can exclude this from the equation, as it is not significant. We could say that the weighting of the different DRGs are not playing a significant role regarding the increase or decline of costs pr DRG-point.

The processes (pro) being used are responsible for a reduction of 8,574 percent points on the costs. This implies that the introduction of competition and tender on contracts

have reduced the costs for the regional health enterprises for private day-surgery treatments.

We can see in this regression that the years (dummies) has the highest impact on the costs, with an 18,33, 26,05 and 37,83 percent point reduction from the year 2002 to 2003, 2004 and 2005. This indicates that there also are effects between the years, other than the processes (pro) that are explaining the costs.

When not taking years into account, the regression will be like this:

	B	Std. Error	Sig.
(Constant)	97,178	0,438	0,000
Pro	-17,928	0,157	0,000
WEIGHT	1,932	0,116	0,000
EAST	-7,642	0,292	0,000
WEST	-1,743	0,321	0,000
MIDDLE	-10,791	0,314	0,000
Adjusted R Square	0,229		

Table 4-3 Regression, Dependent variable: Cost, Independent variables: Pro, WEIGHT, EAST, WEST, MIDDLE

The *table 4-3* shows that all of the variables chosen are significant. The processes (Pro) have the highest effect (-17,928) on the costs. Therefore we can conclude that the processes used have reduced the costs. The weight contributes to a 1,932 percent-point rise of the costs, which can be interpreted as when the DRG-weight of the day-surgery is rising by one unit, the costs will rise by 1,932 percent points. A drawback in this analysis is that only 22,9% of the variance in the dependent variable (Cost) was explained by variations in the independent variables.

When comparing the two regressions for costs we can see that processes (Pro) are most important when looking at the model in *table 4-3*, while the years (d2003, d2004, d2005) are more important in the model in *table 4-2*. The reason for the lower process-effect and higher effects of years in *table 4-2* may be that there are other effects concerning how the price (Cost) is set in the private commercial hospitals contracts. When the regional health enterprises started buying services from the private commercial hospitals in 2002 they could not see which prices were “right”, they didn’t have enough information to set correct prices. Each year the regional

health enterprise got more information about the costs of the private hospital, and could therefore set the prices more correctly and as a result reduced the DRG refund year by year. It is clear to me that the first years of private commercial day-surgery were highly profitable for the private hospitals.

5. Selection

Hypothesis: Due to competition which leads to cost reduction and again to selection of patients, private commercial hospitals treat younger patients than public hospitals in day-surgery.

5.1 Have privatization and competition led to selection of patients?

The hypothesis is that private hospitals treat younger patients than public hospitals. Because a young patient generally is healthier than an older, and that the risks for complications generally are lower for a younger patient, private hospitals will "choose" younger patients.

Theoretically this could be seen as a moral hazard problem, where the private hospital chooses high or low effort see *figure 2-3*. Since younger patients often are less complicated or need lower effort to treat, they will be chosen by the private hospitals.

To test this hypothesis the mean age of patients is taken on both public and private commercial hospitals. The results are presented in *figure 5-1*.

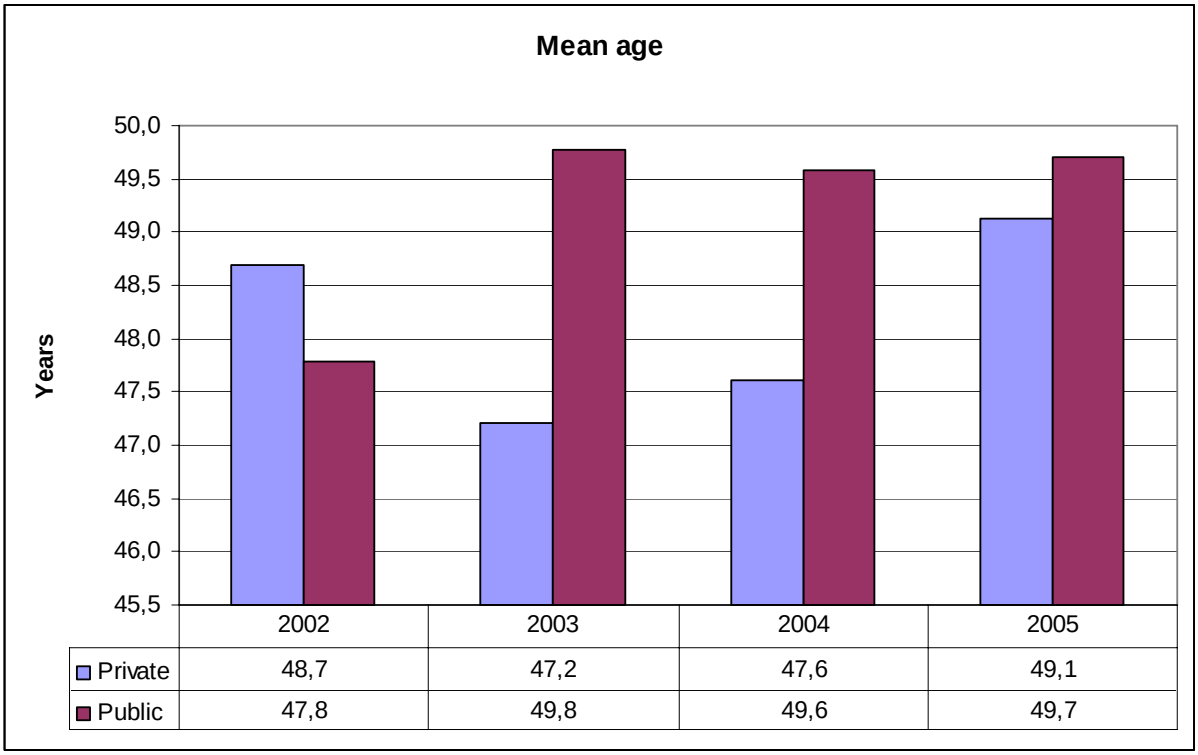


Figure 5-1 Mean age, patients treated by private and public hospitals

We can see from *figure 5-1* that the private hospitals in fact are treating younger patients than the public hospitals except the year 2002. We can see that the mean age levels out between private and public hospitals. From this we could say that the selection of patients on the topic of age is reduced from 2003 to 2005.

To test the hypothesis that the private hospitals treat younger patients than public hospitals more thoroughly, I used linear regression (OLS regression) with the data separated for each year. The descriptive data for this analysis is presented in *table 5-1*.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
y	1277836	2002	2005	2003,597	1,097
WEIGHT	1277836	0,17	5,26	0,873	0,655
EAST	1275026	0	1	0,310	0,462
SOUTH	1275026	0	1	0,243	0,429
WEST	1275026	0	1	0,190	0,392
MIDDLE	1275026	0	1	0,150	0,357
NORTH	1275026	0	1	0,108	0,310
PRIV	1277836	1	2	1,921	0,270
Valid N (listwise)	1275026				

Table 5-1 Descriptive data for the AGE analysis

East, West, Middle and South are dummy variables with North as reference. The results of the regressions are presented in *table 5-2*.The regression equation for this analysis is:

$AGE_{year} = b_0 + b_1$* WEIGHT + b_2*SOUTH + b_3*EAST + b_4*WEST + b_5*MIDDLE + b_6*PRIV

	Dependent Variable : AGE					
	2002			2003		
	B	Std. Error	Sig.	B	Std. Error	Sig.
(Constant)	41,104	0,480	0,00	36,096	0,333	0,00
WEIGHT	6,572	0,086	0,00	7,103	0,060	0,00
EAST	1,624	0,155	0,00	2,790	0,141	0,00
WEST	1,395	0,167	0,00	2,162	0,152	0,00
MIDDLE	2,657	0,177	0,00	2,773	0,159	0,00
SOUTH	2,933	0,158	0,00	3,392	0,144	0,00
PRIV	-0,181	0,227	0,43	2,389	0,154	0,00

	Dependent Variable : AGE					
	2004			2005		
	B	Std. Error	Sig.	B	Std. Error	Sig.
(Constant)	39,438	0,296	0,00	41,227	0,279	0,00
WEIGHT	5,643	0,053	0,00	7,958	0,058	0,00
EAST	2,353	0,139	0,00	2,398	0,137	0,00
WEST	1,119	0,148	0,00	1,486	0,145	0,00
MIDDLE	2,001	0,155	0,00	2,203	0,153	0,00
SOUTH	1,923	0,144	0,00	1,355	0,142	0,00
PRIV	1,642	0,135	0,00	-0,111	0,127	0,38

Table 5-2 Regression, Dependent variable: Age, Independent variables: WEIGHT, EAST, WEST, MIDDLE, SOUTH, PRIV. Reference dummy variable: NORTH. Separate regressions each for each year.

The regression results show that the differences in age of patients in 2002 and 2005 between private and public providers of day-surgery are not significant. As shown in the *table 5-3*, the years 2003 and 2004 have a significant difference between private and public hospitals on patient's age.

	PRIV		
	B	**Sig.**	
2002	-0,181	0,43	Not Significant
2003	2,389	0,00	Significant
2004	1,642	0,00	Significant
2005	-0,111	0,38	Not Significant

Table 5-3 Significance of Private hospitals on AGE

This difference indicates that in the years 2003 and 2004 there have been some kind of selection of patients by the private hospitals. They are treating patients which are 2,38 and 1,64 years younger than the patients treated by public hospitals. Based on these findings it is difficult to make a certain conclusion about the selection of patients.

When not taking years into account, the regression results are as presented in *table 5-4*.

Variables	**B**	**Std. Error**	**Sig**
(Constant)	39,569	,162	,000
WEIGHT	6,814	,031	,000
EAST	2,332	,071	,000
WEST	1,572	,076	,000
MIDDLE	2,390	,080	,000
SOUTH	2,369	,073	,000
PRIV	,900	,075	,000

Table 5-4 Regression, Dependent variable: Age, Independent variables: WEIGHT, EAST, WEST, MIDDLE, SOUTH, PRIV. Reference dummy variable: NORTH. All years as a whole

Overall in the period the difference between private and public hospitals are significant and not due to chance. The overall difference between public and private hospitals is 0.9 years. This confirms the hypothesis that private hospitals are treating younger patients than public hospitals, but it is with a lot of uncertainty due to the

findings in *table 5-2* and *table 5-3*, where we can find years with not significant differences between private and public providers.

A possible explanation for the non significant age-difference in 2002 could be that the price the private commercial hospitals got in 2002, was high, hence no selection of patients were necessary to earn money. In 2005 the non significant difference in age could be an effect of the private commercial hospitals anxiety to loose their contracts the next period.

Other selection problems?

Other selection problems could be selection of DRG-groups, which DRG-groups are treated more or less. This is hard to asses as the total use of private commercial hospitals had an enormous boom and the contracts between the regional health enterprises and the private commercial hospitals have not been constant in the period.

However, in the questionnaire the Health Region East states that they can not see any effects of a selection of patients by the private commercial hospitals as the production is guided by production-frames within the different areas. They also emphasize that the private commercial hospitals can only treat patients when the patients are sent from a referring authority. It is therefore the referring authority combined with the patient choice which decides how many patients the private commercial hospitals are treating. All regions also state in the questionnaire that they can not see any cases or indications of selection of patients by the private commercial hospitals.

6. Conclusions

6.1 The use of private hospitals

The topic of this paper has been the effects the private commercial hospitals have on cost and patient selection within day surgery treatments. The hypotheses tested were:

- Due to the privatization and competition on day-surgery we could assume that the prices pr DRG have been reduced over the years.
- Due to competition which leads to cost reduction and again to selection of patients, private commercial hospitals treat younger patients than public hospitals in day-surgery. They choose low risk patients over high risk patients (creaming).

The data shows us that the use of private hospitals have grown the last couple of years, and the mean cost pr produced DRG-point has been reduced. The effect will hypothetically be higher production and lower costs. One should be aware of that this could lead to a lower quality of services provided. This because there is a limit on how much one can push the price before some areas in the treatments gets affected. The regional health enterprises are clear on their answers in the questionnaire that they in addition to price also look at quality when assessing whether a private hospital should get a contract or not, hopefully enough to prevent a recession in quality.

If the privatization of day-surgery treatments really have had a cost reducing effect on the entire health care system, is difficult to say. But it is clear that the day surgical treatments performed by private commercial hospitals have become cheaper for the regional health enterprises over the years. One could imagine that the public hospitals are loosing patients to the private commercial hospitals and therefore are loosing money on easily treated patients. The public hospitals may also get vacant capacity

which could lead to higher total costs. If the cost reductions by privatizing day surgery treatments are higher than the possible cost increase for public hospitals and the health care sector as a whole, is hard to say.

The data presented in this thesis show that in the year 2005 the mean refund pr DRG-point for private commercial hospitals was 50,25% while the refund from the government to the regional health enterprises was 60% pr DRG-point. In other words, the regional health enterprises earned money when they used the private commercial hospitals to perform day-surgery treatments that year. The money earned could be distributed among the other public hospitals.

We could say that the privatization and competition has worked the way it intended. The principal-agent theory states that if you introduce competition the principal would see the real costs, and act accordingly. We can see that the prices were relatively high in 2002 and gradually declining through the years to 2006. The cost analysis confirms this, and the processes as well as the difference between the defined years are significant regarding a cost reduction.

The patients using private hospitals for day-surgery are now more than ever more equal the users of public day-surgery-providers when looking at distribution of age. The age analysis shows a significant difference in age for the years 2003-2004, but no significant difference in the years 2002 and 2005. The reason for no selection in 2002 is possibly the high level of payment for each patient resulted in high profits for all patients. In 2005 the cause is more vague, the reason may to some extend be the patient right act and its extension in 2004 as well as an anxiety from the private commercial hospitals to not getting their contracts renewed the next period.

The data used in the analysis are restricted to the years 2002-2005, but some of the descriptive data includes the years 2006 and estimates for 2007 and 2008. We are missing data on Health South in the cost analysis which could lead to some differences in the results but probably not change the overall conclusion of the cost analysis.

6.2 Supply of health care services

Within the health care system it is the provider, by the doctor and health personnel which have the most information regarding the patient's needs and treatments. This gives the provider a great deal of power in a market. Due to the asymmetric information the health personnel can choose the services a patient should get. Primary doctors are therefore often called "gatekeepers" because they decide who gets treatment in for example a hospital. In the health care sector there are large establishment costs, both regarding equipment and education and specialization of personnel. Therefore there are relatively few competitors to establish new institutions.

Since supply of health services generates demand for health services, we can say that if someone supplies a health service we would get demand for it. If a new treatment method is entering a market, there would be demand for this method. The medical-technological evolvement creates often new products and treatment-methods.

6.2.1 Pros and Cons with private health services

There are both positive and negative aspects for private and public supply of health care services. Arguments for private health care services in Norway is often presented as; the relieve-argument, necessity-argument, freedom of choice-argument, and the historical-argument (Hjort 1987).

Relieve-argument

The relieve-argument says that a supply from a private health care sector, contributes to raise the total supply of health care services, and by relieving the public health care services, reducing patient queues and waiting-time (Hjort 1987).

Necessity-argument

The necessity-argument states that the public health care system not always have the resources (financial) to supply health care services due to rapidly growing demand (Hjort 1987).

Competition-argument

The competition-argument includes that private providers of health care services have economic reward systems which makes them more efficient and consumer- and service-oriented. They are interested in a profit, and have therefore more to gain with efficient production and satisfied patients (Hjort 1987).

Freedom of Choice-argument

The freedom of choice-argument states that it is a human right to spend money on the treatment they want, and choose where they want to be treated (Hjort 1987).

Historical-argument

The historical-argument refers to that we in all times have been provided by some private health care services and free “industry “in Norway (Hjort 1987).

There are of course some negative aspects of private health care services as well. A main disadvantage of private health care services is that there could be a problem to fulfil political goals and priorities, especially the idea of equal access to health care services regardless of private financial resources and geographical locations.

6.3 Epilogue

The rising prosperity has created an increasing demand for health services and such a market for private, commercial health-services. Increased wealth in the population, greater possibilities of choice, queues and budget-problems in the public health services and an increasing growth of health-personnel, is factors which can explain this trend. These private suppliers are naturally constrained to larger or medium-sized cities, but are used increasingly by inhabitants from the entire country. This trend is reinforced by “Rikstrygdeverkets” and the Regional health enterprises purchasing of services in this marked. In some areas the competition between private and public providers of health-services is noticeable. The economical, ideological and political

development will decide if commercialised health services are to be more than a valuable supplement to the public offering of health-services.

We have to assume that the private commercial supply of health-services has come to stay, and in a population with a growing wealth in the middleclass, possibly grow. At the same time we can see that the private-health supply primarily will concentrate on different niches in the health market, often tied to specific diagnosis and problems (Øvretveit 2003). Within these areas the private supply could lead to effective and good solutions which again could lead to more awareness amongst the public hospitals. More complicated interventions and patients with chronic and intricate problems, will still be treated within the public healthcare. As will the responsibility for acute care, research, education, training and cooperation between different parts of the health service. The growth of private supply may therefore result in distribution-effects with consequences for other patient-groups and other health-services.

How big, and what role, the private commercial health-service will have in Norway, is guided by the restructuring and adaptation skills in the public health-services and on the size of the budget-constraints at their disposal. The main issue is effectiveness and policy. But the preferences to liquid and consumer-oriented patients will probably also play an increasing role (Berg 2006).

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Appendix 1 DRG-Codes for day-surgery

DRG	Type of treatment
004	Spinal procedures
006	Carpal tunnel release
007	Periph & cranial nerve & other nerv sys proc w cc
008	Periph & cranial nerve & other nerv sys proc w/o cc
009	Spinal disorders & injuries
036	Retinal procedures
037	Orbital procedures
038	Primary iris procedures
039	Lens procedures with or without vitrectomy
040	Extraocular procedures except orbit age > 17
041	Extraocular procedures except orbit age 0-17
042	Intraocular procedures except retina iris & lens
050	Sialoadenectomy
051	Salivary gland procedures except sialoadenectomy
052	Cleft lip & palate repair
053A	Sinus procedures
053B	Mastoid, temporal bone and inner ear procedures
054O	Sinus procedure, short therapy
054P	Mastoid, temporal bone and inner ear procedures, short therapy
055O	Miscellaneous major ear, nose , mouth & throat procedures, short therapy
055P	Other minor ear, nose , mouth & throat procedures, short therapy
055	Miscellaneous ear, nose , mouth & throat procedures
056	Rhinoplasty
057	T&a proc, except tonsillectomy &/or adenoidectomy only, age > 17
058	T&a proc, except tonsillectomy &/or adenoidectomy only, age 0-17
059	Tonsillectomy &/or adenoidectomy only, age >17
060O	Operations on tonsils or adenois, short therapy
060	Tonsillectomy &/or adenoidectomy only, age 0-17
063O	Other major ear, nose, mouth & throat o. r. procedures, short therapy
063	Other major ear, nose, mouth & throat o. r. procedures
076	Other resp system o. r. procedures w cc
077O	Other resp system o. r. procedures, short therapy
077	Other resp system o. r. procedures w/o cc
112A	Coronary dilatation with contrast cardiography
112B	Percutaneuous ablations for cardiac arrhytmia
112C	PCI w/o myocardial infarction, w/o CC
112D	PCI w/o myocardial infarction, w CC
112E	PCI w myocardial infarction, w/o CC
112F	PCI w myocardial infarction, w CC

112O	Percutaneous cardiovascular procedures, short therapy
114	Upper limb & toe amputation for circulatory system disorder
119O	Vein ligation & stripping, short therapy
119	Vein ligation & stripping
152	Small & large bowel procedures w cc
153	Small & large bowel procedures w/o cc
154A	Major stomach, esophageal and duodenal procedures, age >17, w cc
154B	Other stomach, esophageal and duodenal procedures, age > 17, w cc
155A	Major stomach, esophageal and duodenal procedures, age >17, w/o cc
155B	Other stomach, esophageal and duodenal procedures, age >17, w/o cc
156O	Stomach, esophageal & duodenal procedures, short therapy
156	Stomach, esophageal & duodenal procedures, age 0-17
157	Minor intestinal procedure w cc
158O	Minor intestinal procedures, short therapy
158	Minor intestinal procedures w/o cc
159	Hernia procedures except inguinal & femoral, age > 17 w cc
160O	Hernia procedures except inguinal & femoral, short therapy
160	Hernia procedures except inguinal & femoral, age > 17 w/o cc
161	Inguinal & femoral hernia procedures, age > 17 w cc
162O	Inguinal & femoral hernia procedures, short therapy
162	Inguinal & femoral hernia procedures, age > 17 w/o cc
163	Hernia procedures, age 0-17
166N	Appendectomy w complicated principal diag
167O	Appendectomy, short therapy
167	Appendectomy w/o complicated principal diag w/o cc
168	Mouth procedures w cc
169O	Mouth procedures, short therapy
169	Mouth procedures w/o cc
170	Other digestive system o. r. procedures w cc
171O	Other digestive system o. r. procedures, short therapy
171	Other digestive system o. r. procedures w/o cc
193	Biliary tract proc except only cholecys w or w/o c. d. e. w cc
194	Biliary tract proc except only cholecys w or w/o c. d. e. w/o cc
195	Cholecystectomy w c. d. e. w cc
196	Cholecystectomy w c. d. e. w/o cc
210	Hip & femur procedures except major joint, age > 17, w cc
211	Hip & femur procedures except major joint, age > 17, w/o cc
212O	Hip & femur procedures except major joint, short therapy
212	Hip & femur procedures except major joint, age 0-17
213O	Amputation for musculoskeletal system & conn tissue disorder, short therapy
213	Amputation for musculoskeletal system & conn tissue disorder
214A	Combined anterior/posterior spinal fusion
214B	Spinal fusion with cc
214C	Back & neck procedures except spinal fusion, w cc

215B	Anterior or posterior spinal fusion, w/o cc
215C	Back & neck procedures except spinal fusion, w/o cc
215O	Back & neck procedures, short therapy
216O	Biopsies of musculosceletal system & connective tissue, short therapy
216	Biopsies of musculosceletal system & connective tissue
217O	Wnd debrid & skn grft except hand, for muscscelet & conn tissue disease, short therapy
217	Wnd debrid & skn grft except hand, for muscscelet & conn tissue disease
218	Lower extrem & humer proc except hip, foot, femur age > 17, with cc
219	Lower extrem & humer proc except hip, foot, femur age > 17, w/o cc
220O	Lower extrem & humer proc except hip, foot, femur, short therapy
220	Lower extrem & humer proc except hip, foot, femur age 0-17
221	Knee procedures w cc
222O	Knee procedures, short therapy
222	Knee procedures w/o cc
223O	Major shoulder/elbow proc, or other upper extremity proc, short therapy
223	Major shoulder/elbow proc, or other upper extremity proc w cc
224O	Shoulder, elbow or forearm proc, exc major joint proc, short therapy
224	Shoulder, elbow or forearm proc, exc major joint proc, w/o cc
225O	Foot procedures, short therapy
225	Foot procedures
226	Soft tissue procedures w cc
227O	Soft tissue procedures, short therapy
227	Soft tissue procedures w/o cc
228O	Major thumb or joint proc, or other hand or wrist procedures, short therapy
228	Major thumb or joint proc, or oth hand or wrist proc w cc
229O	Hand or wrist procedures, except major joint procedures, short therapy
229	Hand or wrist proc, except major joint proc, w/o cc
230O	Local excision & removal of int fix devices of hip & femur, short therapy
230	Local excision & removal of int fix devices of hip & femur
231O	Local excision & removal of int fix devices except hip & femur, short therapy
231	Local excision & removal of int fix devices except hip & femur
232O	Arthroscopy, short therapy
232	Arthroscopy
233	Other musculoscelet sys & conn tiss o. r. proc w cc
234O	Other musculoscelet system & connective tissue o. r. procedures, short therapy
234	Other musculoscelet sys & conn tiss o. r. proc w/o cc
257	Total mastectomy for malignancy w cc
258O	Total mastectomy for malignancy, short therapy
258	Total mastectomy for malignancy w/o cc
259	Subtotal mastectomy for malignancy w cc
260O	Subtotal mastectomy for malignancy, short therapy
260	Subtotal mastectomy for malignancy w/o cc
261O	Breast proc for non-malignancy except biopsy & local excision, short therapy
261	Breast proc for non-malignancy except biopsy & local excision

262O Breast biopsy & local excision for non-malignancy, short therapy
262 Breast biopsy & local excision for non-malignancy
265 Skin graft &/or debrid except for skin ulcer or cellulitis w cc
266O Skin graft &/or debrid for skin ulcer or cellulitis, short therapy
266 Skin graft &/or debrid except for skin ulcer or cellulitis w/o cc
267O Perianal & pilonidal procedures, short procedures
267 Perianal & pilonidal procedures
268O Skin & subcutaneus tissue plastic procedures, short therapy
268 Skin & subcutaneus tissue plastic procedures
269 Other skin & subcut tiss proc w cc
270O Other skin & subcutaneous tissue procedures, short therapy
270 Other skin & subcut tiss proc w/o cc
286O Adrenal & pituitary procedures, short therapy
286 Adrenal & pituitary procedures
288A Gastroinstestinal procedure for obesity
288B Other procedure for obesity
288O Gastrointestinal procedure for obesity, short therapy
288P Other procedure for obesity, short therapy
291O Thyroglossal procedures, short therapy
291 Thyroglossal procedures
292 Other endocrine, nutritional or metabolic disease o. r. procedure w cc
293O Other endocrine, nutritional or metabolic disease o. r. procedure, short therapy
293 Other endocrine, nutritional or metabolic disease o. r. procedure w/o cc
303 Kidney, ureter & major bladder procedures for neoplasm
304 Kidney, ureter & major bladder procedures for non-neopl w cc
305O Kidney, ureter & major bladder procedures, short therapy
305 Kidney, ureter & major bladder procedures for non-neopl w/o cc
308 Minor bladder procedures w cc
309O Minor bladder procedures, short therapy
309 Minor bladder procedures w/o cc
310 Transurethral procedures w cc
311O Transurethral procedures, short therapy
311 Transurethral procedures w/o cc
312 Urethral procedures, age > 17 w cc
313 Urethral procedures, age > 17 w/o cc
314O Urethral procedures, short therapy
314 Urethral procedures, age 0-17
315O Other kidney & urinary tract o. r. procedures, short therapy
315 Other kidney & urinary tract o. r. procedures
336 Transurethral prostatectomy w cc
337O Transurethral prostatectomy, short therapy
337 Transurethral prostatectomy w/o cc
338 Testes procedures for malignancy
339 Testes procedures for non-malignancy, age > 17

340O	Testes procedures, short therapy
340	Testes procedures for non-malignancy, age 0-17
341O	Penis procedures, short therapy
341	Penis procedures
342	Circumcision, age > 17
343O	Circumcision, short therapy
343	Circumcision, age 0-17
345O	Other male reproductive system o. r. procedures, short therapy
345	Other male reproductive system o. r. procedures except for malignancy
354	Uterine, adnexa proc for non-ovarian/adnexal malig w cc
355O	Uterine and adnexal procedures for non-ovarian/adnexal malignancy, short therapy
355	Uterine, adnexa proc for non-ovarian/adnexal malig w/o cc
356O	Female reproductive system reconstructive procedure, short therapy
356	Female reproductive system reconstructive procedure
357O	Uterine & adnexa proc for ovarian or adnexal non-malignancy, short therapy
357	Uterine & adnexa proc for ovarian or adnexal malignancy
358	Uterine & adnexa proc for ovarian or adnexal non-malignancy w cc
359O	Uterine and adnexal procedures for non-ovarian/adnexal malignancy, short therapy
359	Uterine & adnexa proc for ovarian or adnexal non-malignancy w/o cc
360O	Vagina, cervix & vulva procedures , short therapy
360	Vagina, cervix & vulva procedures
361O	Gynecological laparoscopy or sterilization in laparatomy, short therapy
361	Gynecological laparoscopy or sterilization in laparatomy
363	D&c, conization & radio-implant, for malignancy
364O	D&c, conization, for non-malignancy , short therapy
364	D&c, conization, for non-malignancy
365O	Other female reproductive system o. r. procedures, short therapy
365	Other female reproductive system o. r. procedures
377O	Postpartum & post abortion diagnoses w o. r. procedure, short therapy
377	Postpartum & post abortion diagnoses w o. r. procedure
381O	Abortion, short therapy
381	Abortion w d&c, aspiration curettage or hysterotomy
392	Splenectomy age > 17
394O	Other o. r. procedures of the blood and blood forming organ, short therapy
394	Other o. r. procedures of the blood and blood forming organ
401	Lymphoma & non-acute leukemia w other o. r. proc w cc
402O	Lymphoma & non-acute leukemia w o. r. procedures, short therapy
402	Lymphoma & non-acute leukemia w other o. r. proc w/o cc
408O	Myeloprolif disord or poorly diff neopl w other o. r. proc, short therapy
408	Myeloprolif disord or poorly diff neopl w other o. r. proc
415O	Procedure for infectious & parasitic diseases, short therapy
415	Procedure for infectious & parasitic diseases
424N	O. r. procedure w principal diagnos of mental illness or abuse
424O	O. r. procedure w principal diagnosis of mental illness, short therapy

439	Skin grafts for injuries
441O	Hand procedures for injuries, short therapy
441	Hand procedures for injuries
442O	Major operation for complication of care, short therapy
442	Other o. r. procedures for injuries w cc
443O	Other o. r. procedures for injuries, short therapy
443	Other o. r. procedures for injuries w/o cc
458O	Non-extensive burns w shin graft, short therapy
458	Non-extensive burns w skin graft
459O	Non-extensive burns w wound debridement or other o. r. proc , short therapy
459	Non-extensive burns w wound debridement or other o. r. proc
461O	O. r. proc w diagnoses of other contact w health services, short therapy
461	O. r. proc w diagnoses of other contact w health services
493	Laparoscopic cholecystectomy w/o c. d. e. w cc
494O	Cholecystectomy, short therapy
494	Laparoscopic cholecystectomy w/o c. d. e. w/o cc
501A	Reconstruction of breast with cc
501B	Reconstruction of breast w/o cc
501O	Reconstruction of breast, short therapy
502	Mastectomy and reconstruction of breast for malignancy
509O	Other procedure for breast problem, short therapy
509	Other procedure for breast problem
521O	Simple correction of obstructive apnoe
521	Simple correction of obstructive apnoe

Appendix 2 Questionnaire

Kartlegging av avtaler mellom RHF og private, kommersielle sykehus

A. Avtaler med private, kommersielle sykehus (*A1 og A2 besvares i skjema 1*):

1. Hvor mange avtaler med private, kommersielle sykehus overtok RHF av fylkene pr 1.1.2002, og hvor mange avtaler hadde RHF-ene kontrakt med per 1.7.2002 og per 1.1 i årene 2003-2007?
2. Hvilke utgifter (totalt) er utbetalt på årsbasis i forbindelse med disse avtalene? For 2007 gis et anslag.

Skjema 1.	(A1) Antall avtaler per 1.1 (og 1.7.2002)	(A2) Sum utgifter på avtalene (1000 kr)
1.1.2002		
1.7.2002		
2003		
2004		
2005		
2006		
2007		

B. Budsjettprosesser og kontrakter (*B1 og B2 besvares i skjema 2, B3 i skjema 3*):

1. Hvordan var budsjettprosessen med de private, kommersielle sykehusene organisert? Vi skiller her mellom tre typer av budsjettprosesser:

- Kostnadssammenlikninger (K): Budsjett basert på sammenlikninger i kostnader med andre aktører – offentlige eller private - men uten selektive kontrakter

- Anbudskonkurranse (A): Budsjett basert på kostnadssammenlikninger med andre aktører (offentlige eller private), selektive kontrakter
- Ingen kostnadssammenlikninger ble utført

2. Hvordan var avtalene/kontraktene utformet? Vi skiller her mellom fire ulike kontraktstyper:

- Ingen restriksjoner på budsjettstørrelse og aktivitet (alternativ 1)
- Restriksjoner på budsjettstørrelse, men ikke på aktivitet (alternativ 2)
- Ikke restriksjoner på budsjettstørrelse, restriksjoner på aktivitet (alternativ 3)
- Restriksjoner på både budsjettstørrelse og aktivitet (alternativ 4)

Skjema 2	Budsjettprosesser	Avtaler
Høst 2001		
Høst 2002		
Høst 2003		
Høst 2004		
Høst 2005		
Høst 2006		
Andre kommentarer		

Vi antar at budsjettprosessene kjøres hver høst for det etterfølgende budsjettår. Dersom det er avvik fra denne regelen, for eksempel mer langsiktige avtaler, så gjør oppmerksom på det.

3. Dersom K eller A under budsjettprosesser:

i. Hvilke kriterier har RHF lagt til grunn når en har vurdert kostnadsforskjeller mellom private, kommersielle sykehus og mellom offentlige og private, kommersielle sykehus?
ii. Hvilke utfordringer ser RHF når det gjelder vurdering av kostnads- og kvalitetsforskjeller mellom offentlige og private, kommersielle sykehus?

iii. Hvis A:
   a. Hvor mange la inn anbud?
   b. Er det andre forhold ved konkurransesituasjonen som bør nevnes?

Skjema 3. (hvis for liten plass; legg ved svarene)
i.)
ii.)
iii.)

C. Resultater (*besvares i skjema 4, eventuelt legg ved svarene*)

1. Har det, evt. som følge av endringer i enhetskostnadene, skjedd vridninger i aktiviteten i de private sykehusene?

2. Er det andre forhold ved kostnadsutvikling eller aktivitet som er verdt å nevne?

Skjema 4 (Hvis for liten plass; legg ved svarene)
C1.)
C2.)

D. Avtalene

Vi ber om å få tilsendt kopi av alle avtaler mellom RHF og de private, kommersielle sykehusene som er inngått i perioden 2002-2006/7 (se omtale i følgebrevet). Avtalene må inneholde informasjon om pris eller eventuelt om budsjett og volum.

E. Kontakt

Til siste ber vi om navn, e-post og telefonnummer til den som har fylt ut dette skjemaet.

Kontaktinformasjon
Navn
E-post
Telefonnummer